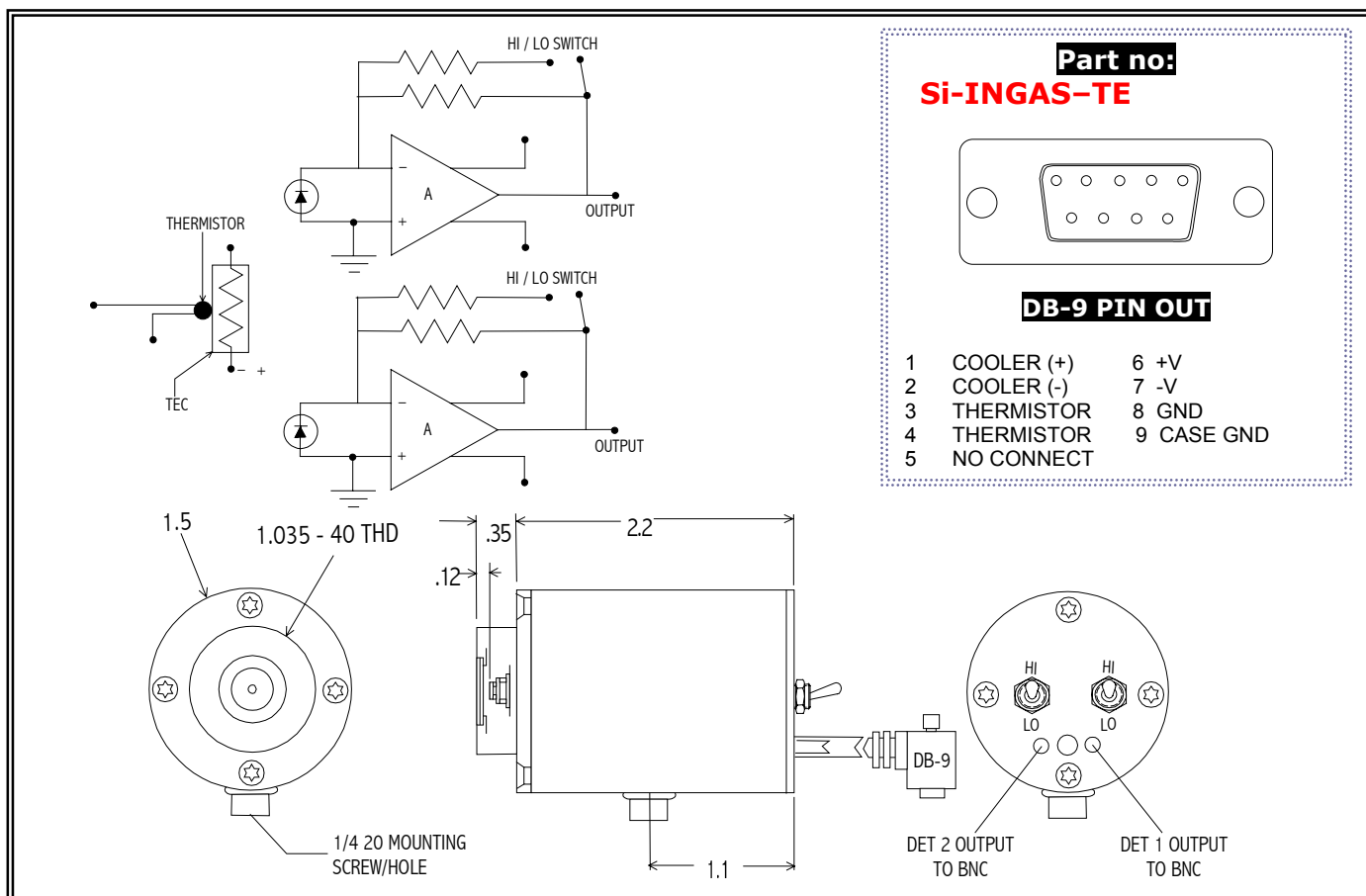


# 2 - COLOR PHOTODIODE / RECEIVER



**Application Note** This unit is a high performance two color "sandwich" photodiode / receiver operated with a thermoelectric cooler for stabilization/cooling and dual gain FET input transimpedance amplifiers. The output voltage is proportional to the input signal current:  $V_{out} = I_{signal} \cdot R_f$ . The PD/AMP are DC coupled dual gain systems. Care should be taken in shielding the unit from stray light during operation to prevent saturation of the amplifiers (and potential failure).

## SPECIFICATIONS

Detector Type	2.5 mm dia Si Photodiode / 2 mm dia InGaAs Photodiode			
Operating Temperature - °C	22 @ $I_{tec} = 0.0 A$		-30 @ $I_{tec} = 0.6 A$	
Operating Wavelength - $\mu m$	0.3 - 1.0	1.0 - 1.7	0.3 - 1.0	1.0 - 1.6
Responsivity - V/W @ pk	$0.6 \times 10^9 / 10^8$	$0.6 \times 10^8 / 10^7$	$0.6 \times 10^9 / 10^8$	$0.6 \times 10^8 / 10^7$
Noise - V/Hz <sup>1/2</sup>	$6 \times 10^{-6} / 10^{-7}$	$4.0 \times 10^{-6} / 10^{-7}$	$3.6 \times 10^{-6} / 10^{-7}$	$1.2 \times 10^{-6} / 10^{-7}$
NEP - W/Hz <sup>1/2</sup> @ pk	$1 \times 10^{-14}$	$7 \times 10^{-14}$	$< 6 \times 10^{-15}$	$< 2 \times 10^{-14}$
Bandwidth (-3dB) - Hz	DC - 2k			
Power Requirements	+/- 9 VDC to +/- 15 VDC			
Connections	Two shielded signal cables terminated with a BNC. Shielded power cable terminated with a DB-9 connector directly couples the unit with the PS/TC -1 Low Noise Power Supply.			